



Because Oregon's Health Depends On It.



Nursing Student Admissions Database Pilot Project

Who Gets In?

Pilot Year Data from the Nursing Student Admissions Database
A Report from the Oregon Center for Nursing



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- Nursing workforce analysis and research
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~ LaVera Nordling, Umpqua Community College Project Contact

EXECUTIVE SUMMARY

Oregon's current nursing workforce does not reflect the diversity of Oregon's population. An important first step in increasing diversity in Oregon is to collect baseline data on nursing school applicants. The Oregon Center for Nursing and its collaborative educational partners collected data on all 2008-2009 applicants to Oregon's 21 pre-licensure nursing programs, forming the Nursing School Admissions Database (NSAD).

The NSAD resulted in a rich source of information about the demand for nursing school seats, multiple school applicants, and applicant demographics. The study also collected critical baseline data about the race, ethnicity and gender of nursing school applicants that will allow OCN to monitor nursing school retention rates in future years. The major findings of this report are:

- In 2008, 3,821 applicants submitted 6,186 applications for 1,455 nursing school seats, an average of 2.3 qualified applicants per nursing school seat.
- Collecting applicant level data instead of program-level data is feasible and also accounts for applicants who apply to more than one program.
- Applicant-level data provides a more accurate description of the demand and demographics of nursing school applicants.
 - In 2008-2009, program-level data overstated the number of nursing school applicants by 2,365 applicants.
 - Program-level data previously reported that there were 3.6 qualified applicants per seat. Applicant-level data revealed that there were 2.3 applicants per nursing school seat, indicating the program level data overstated the number of qualified applicants per seat by 1.3.
- The acceptance rate (selectivity) of nursing schools was 45 percent.
- The enrollment rate (yield) for nursing schools was 81 percent.
- The vast majority of nursing school applicants (83 percent) and enrolled students (93 percent) are Oregon residents.
- Forty-three percent of enrolled students submitted applications to more than one school. Enrolled students applied to an average of 1.9 programs.
- Applicants from underrepresented ethnic/racial groups were more likely to be unqualified applicants.
- Ninety-one percent of unqualified applicants only submitted one application.
- Applicants from underrepresented ethnic/racial groups who met the qualifications for nursing school were admitted at rates similar to Caucasian students.

OCN will continue to collect data for the NSAD during the 2009-2010 academic year. Future data collection will build on the pilot year by tracking applicants who apply to nursing schools in multiple years as well as retention of currently enrolled nursing students to examine retention of students from diverse backgrounds.

INTRODUCTION

Nurses practicing in Oregon are increasingly caring for patients and working with colleagues from diverse backgrounds.¹ The nursing workforce in Oregon is less diverse than Oregon's overall population and this may affect the quality of healthcare delivered to all Oregonians.² Research has indicated that a diverse workforce is a critical and necessary component in working towards the reduction of health disparities and delivering high quality healthcare.^{1,3} The Oregon Center for Nursing (OCN) is committed to increasing and diversifying Oregon's nurse workforce. An important first step in increasing the diversity in the Oregon nursing workforce is to obtain baseline data on nursing school recruitment. This baseline data will guide future initiatives in nursing school recruitment and retention of qualified applicants.

At the beginning of the NSAD project, OCN and its collaborative partners agreed that the program-level report on nursing program applicants had severe limitations. Each of the state's 21 nursing programs annually reports their applicant pools to the Oregon State Board of Nursing (OSBN) (see Appendix C for a brief description of programs). Reports include the number of applications received by each institution, however the number of individual applicants cannot be discerned from these statistics. When program-level data is combined, applicants applying to more than one program are counted as individual applicants multiple times. This yields an inflated count of individuals applying to Oregon's nursing programs. The current reporting system also makes it impossible to determine if qualified applicants from underrepresented groups are being turned away at higher rates. It was agreed that a statewide nursing student admissions database, using applicant level data, would eliminate these shortcomings and would be particularly useful in better understanding student demand for limited nursing program seats.³

In working to improve diversity in the nurse workforce, it is essential to collect, track and report reliable numbers and demographic profiles of the applicant and enrolled student pools of Oregon's nursing programs. The Nursing Student Admissions Database Pilot Project has undertaken to determine the feasibility of such an undertaking. This report describes the project goals, methods, and findings.

PROJECT OVERVIEW

In December 2008, the Oregon Employment Workforce and Economic Research Division published *Training Oregonians... For The Right Jobs*. The report highlighted registered nurses as the number one occupation in the state for high demand, high wage jobs. To meet this increasing demand, Oregon's nursing programs have more than doubled enrollment since 2001. While the number of nursing students has increased, the number of nurses from under-represented groups do not mirror Oregon's population. Nursing leaders have called for improved recruitment efforts aimed at underrepresented populations to increase the diversity of its workforce—both nationally and in Oregon.^{2,4,5,6}

The primary aim of the NSAD Pilot Project was to collect accurate baseline data describing the number and demographic characteristics of the applicant and enrolled student pools of Oregon's 21 pre-licensure RN programs after this dramatic increase in nursing students. The program was designed to produce results to aid institutions of higher education interested in expanding

existing, modifying or launching new nursing programs by providing a clear, accurate understanding of nursing student demand and provide guidance in planning specific solutions to increase the diversity of Oregon's nursing workforce.

The NSAD Pilot Project is one component of a regional nursing workforce agenda aimed at increasing the scope and diversity of Oregon's nursing workforce. Funded by the Oregon Department of Community Colleges and Workforce Development, Employer Workforce Training Fund (GRNT 0148), the primary and secondary purposes of this pilot project were directly linked to goals outlined in the Oregon Workforce Investment Board's 2006 Strategic Plan. This plan guides the Governor and the state in determining approaches that will increase the skill level and diversity of Oregon's future and current workers to meet the needs of Oregon's employers.⁷

The NSAD pilot project can serve as a model for collecting accurate baseline data on nursing program applicants that would provide the impetus for targeted outreach to increase diversity and cultural competence within the pool of skilled nurses across Oregon. It is hoped that NSAD will provide the baseline data to transform the recruitment and retention of qualified nursing applicants.

LIST OF TERMS

Application. A formal document unique to each nursing program completed and submitted by an individual seeking admission to a specific ADN or BSN program.

Applicant. An individual who submitted an application to one or more nursing programs.

Multiple program applicant. An individual who submitted an application to two or more nursing programs.

Unqualified applicant. An individual who did not meet the minimum admission criteria of any nursing programs to which s/he applied.

Qualified applicant. An individual who met the minimum admission criteria of one or more nursing program(s) to which s/he applied. *Note: A multiple program applicant considered qualified by one nursing program may have been considered unqualified by other program(s).*

Qualified applicant not accepted (QANA). An individual who met the minimum admission criteria of one or more nursing programs to which s/he applied but did not receive any offers of full admission and was not placed on an alternate or wait list by any program.

Accepted applicant. An individual who received an offer of full admission, or was placed on an alternate or wait list, by one or more nursing program(s). *Note: The term "accepted applicant" is synonymous with the phrases "offer made," "offer extended," and "received an offer."*

Accepted applicant enrolled. An individual who was offered full admission (including as an alternate or placed on wait list status) by one or more nursing program(s), went on to enroll in a

program, and remained in his/her seat at the time data was collected. *Note: The term “accepted applicant enrolled” is synonymous with the terms “enrolled student” and “enrolled pool.”*

Pre-admitted BSN students: Data was unavailable for 113 students enrolled in BSN programs who had been pre-admitted as sophomores. These students were eligible to enter the nursing program at their universities as juniors contingent upon passing grades in pre-requisite courses. These students entered their respective universities as freshman in the fall 2006, but their previous applications were unavailable to project contacts for inclusion in demographic statistics of this report. However, these students were included in application, applicant, qualified applicant, accepted applicant, and accepted applicant enrolled counts.

Project partners. Oregon’s 21 pre-licensure registered nurse programs (see Appendix A).

Project subjects. Applicants to Oregon’s ADN, BSN and accelerated BSN nursing programs for the 2008-2009 academic year.

PROJECT PROTOCOL, DATA COLLECTION & ANALYSIS

Confidentiality and FERPA. At the start of this project, several nursing programs and/or project contacts expressed concerns about providing applicant information that might violate the Family Educational Rights and Privacy Act Regulations (FERPA).⁸ Project partners and contacts were assured that the project was exempt from federal policy governing the protection of human subjects in research activities (45 CFR Part 46 §46.101(b)(4)), because the project sought to collect information from existing sources and results would be reported in aggregate at the state level. Thus, neither the subjects nor the institutions would be identifiable. Project partners were assured that applicant-specific information would be seen only by members of the project team employed by the Oregon Center for Nursing (OCN) and that all applicant data would be securely stored throughout the duration of the project.⁹

Applicant data requested. The NSAD project team identified and requested seven pieces of information from all nursing programs. This information included:

1. Applicant name (last, first, middle initial)
2. Any previous last name(s) used by the applicant
3. Date of birth
4. City and state listed on the nursing application
5. Gender
6. Race/ethnicity
7. Any previous degree(s) earned (associate, baccalaureate or graduate/professional)

Information on previous degree(s) earned was requested to determine the number of qualified applicants who had already earned an associate degree or higher. It was thought that this information might prove useful in determining the need for more accelerated BSN programs as a means to increasing pre-licensure RN program capacity.

Program partners were also asked to provide outcomes (e.g., qualified, accepted, enrolled) associated with each of their applicants. Each nursing program first determined if the applicant

was qualified for admission based on criteria established by its program. If qualified, the applicant was then either accepted to the program (an offer was extended) or not accepted. The applicant then decided to enroll or not enroll in the program. It is important to note that multiple program applicants moved through this process at each program to which they applied. Figure 1 illustrates how an applicant moved through the application process and the possible outcomes.

Figure 1. Nursing Program Applicant Outcomes



Program partners were asked to provide as much information as possible. It was known prior to data submission that two partners did not collect race/ethnicity data and three partners did not collect information regarding previous degree(s) earned.

Data collection. Baseline data for 2008-2009 academic year applicants to Oregon’s ADN and BSN programs was collected between September 2008 and February 2009. Over a six week period during the fall of 2008, 20 of 21 programs submitted data. In February 2009, the 21st program submitted data, and three programs provided additional data for new student cohorts. Program partners submitted Excel files containing un-coded applicant data. Files were uploaded to OCN via a secure server.

Data analysis. Electronic files were manually examined to detect errors which were then corrected through communication with project contacts. Data was combined into a single database and coded by the project team to ensure accuracy and preserve the original data received from the programs. Applicant name and date of birth were the two primary fields used to identify unique applicants. In subsequent years of the NSAD Project, applicant name and date of birth will make it possible to determine both the retention status of enrolled students and the number of multi-year admission attempts made by applicants.

Any previous last name used was requested to identify applicants who applied under a different last name. Application periods among Oregon’s nursing programs vary widely, and an applicant may have changed names due to marriage or divorce. Applicant city and state of residence were used to determine the number of out-of-state applicants and enrollees.

The descriptive analysis sought to answer the following key questions:

- How many individuals applied to one or more nursing programs in Oregon?
- How many applicants applied to multiple programs?
- How many applicants were qualified but did not receive an offer?¹⁰
- How many qualified applicants existed for every available nursing program seat?
- What were the demographic profiles of the applicant and enrolled student pools?

- How did this project’s method of analysis improve on previous methods used by Oregon, other states, and national organizations?
- Are qualified students from diverse backgrounds being accepted into Oregon’s nursing programs?

RESULTS

Comparison of Statistics Based on Program-Level versus Applicant-Level Data

It is widely accepted that previous methods used in Oregon, other states, and by national nursing organizations to estimate the total number of applicants and qualified applicants not accepted (QANA) each year resulted in inaccurate counts because there was no way to account for applicants applying to more than one program (multiple program applicants).^{11,12} Numbers of qualified applicants and qualified applicants not accepted were determined by simply totaling the number of applications submitted to each program. As a result, multiple program applicants were counted as distinct applicants more than once.

The project developed an analytic method to evaluate data at the individual applicant level. Applicants were tracked in relation to Oregon’s nursing programs as a whole rather than program-by-program, improving both the accuracy and the utility of statistics. Comparing program-level data with NSAD data reveals the following discrepancies in program-level reporting:

Program-level data.....

- Overstated the total number of applicants by 2,365.
- Overstated the number of qualified applicants per seat by 1.3 applicants.
- Overstated the number of qualified applicants not accepted by 13%.
- Understated the number of accepted applicants by 12%.
- Understated the number of accepted applicants enrolled by 12%.

	Program-Level Data	NSAD Data
Applications	6,186	6,186
Applicants	6,186	3,821
Multiple Program Applicants*	Unknown	1,283
Unqualified Applicants	15%	12%
Qualified Applicants	85%	88%
Qualified Applicants Not Accepted	62%	49%
Accepted Applicants**	32%	45%
Accepted Applicants Enrolled	73%	85%
Available Seats	1,455	1,455
Qualified Applicants per Seat	3.6	2.3

Source: Oregon Center for Nursing, Nursing Student Admissions Database Pilot Project (2008-2009).
 *Multiple program applicants, who applied to between 2 and 12 programs, generated 59% (3,648) of all applications.
 **Accepted applicants includes both offers of full admission and offers of alternate or wait list status.

ADN and BSN Program Applicants

Fifty-three percent of all applications submitted were to ADN programs and 47 percent were submitted to BSN programs. Of the 3,821 applicants to Oregon’s ADN and BSN programs, 48 percent applied to ADN programs only, 37 percent to BSN programs only, and 15 percent to both types of programs. The percentage of BSN program applicants unqualified for admission was nearly three times that for ADN programs. The percentage of qualified applicants not accepted was higher for ADN programs (61 percent) than for BSN programs (43 percent) as was the number of qualified applicants per seat (3.1 and 2.2, respectively). Table 2 compares results for Oregon’s ADN and BSN pre-licensure registered nurse programs.

Table 2. Application, Applicant, and Enrolled Student Pools: ADN, BSN and all Programs			
	Oregon ADN Programs	Oregon BSN Programs	Oregon RN Programs
Applications* (% all Oregon program applications)	3,308 (53%)	2,878 (47%)	6,186 (100%)
Applicants* (% all Oregon program applicants)	2,343 (61%)	2,025 (53%)	3,821 (100%)
Multiple Program Applicants	38%	46%	34%
Unqualified Applicants	7%	19%	12%
Qualified Applicants	93%	81%	88%
Qualified Applicants Not Accepted	61%	43%	49%
Accepted Applicants (Selectivity Rate)	36%	46%	45%
Accepted Applicants Enrolled (Yield Rate)	81%	81%	85%
Available Seats	697	758	1,455
Qualified Applicants per Seat	3.1	2.2	2.3
<i>Source:</i> Oregon Center for Nursing, Nursing Student Admissions Database Pilot Project (2008-2009). Percentages are within group unless otherwise noted *Includes students pre-admitted as sophomores contingent upon passing grades in pre-requisite courses NOTE: Those applying to both ADN and BSN programs are included in both the ADN and BSN Programs columns as well as the Oregon RN Programs column.			

Multiple Program Applicants

Of the 6,186 applications submitted to Oregon’s nursing programs, 34 percent (1,283) were from applicants who applied to two or more programs. Of applicants submitting more than one application, the majority (54 percent) submitted two applications. Table 3 shows the number of applications submitted by applicants.

Table 3. Number of Applications Submitted by Oregon Nursing Program Applicants	
Number of Applications Submitted	Number of Applicants
1	2,538
2	687
3	325
4	156
5	62
6	31
7	8
8	8
9	3
10	2
12	1

Source: Oregon Center for Nursing, Nursing Student Admissions Database Pilot Project (2008-2009)

Selectivity and Yield Rates

Selectivity and yield rates are measures of demand often used in higher education to follow trends in admission offers and matriculation. The **selectivity** (acceptance) **rate** is the percentage of all applicants accepted into a program. Undergraduate programs offering admission to fewer than half of their applicants are considered to be highly selective. Nationally, for the 2005-2006 academic year, over one-half (54 percent) of pre-licensure nursing programs were designated highly selective. With respect to program type, estimated national selectivity rates were 54 percent for ADN programs and 71 percent for BSN programs.¹³

Overall, nursing programs in Oregon are highly selective. NSAD data showed the selectivity rate for Oregon’s nursing programs was 45 percent for the 2008-2009 academic year. When considered individually, the selectivity rate was 36 percent for Oregon’s ADN programs and 46 percent for Oregon’s BSN programs.

The **yield rate** is the percentage of accepted applicants who go on to enroll in a nursing program. Higher yield rates can be used as an indicator of program popularity or a lack of alternative programs of study. Nationally, between 2003 and 2005, pre-licensure registered nurse programs had extraordinarily high average yield rates of over 90 percent. The rate fell to just over 80 percent during the 2005-2006 academic year, but the yield rate was still considered very high when compared to other undergraduate programs. National yield rates were 86 percent for ADN programs and 75 percent for BSN programs.¹³

NSAD data showed the yield rate for Oregon’s nursing programs for the 2008-2009 academic year was 85 percent. Overall, both ADN and BSN programs in Oregon had a yield rate of 81 percent.

Demographic Profile of Applicant and Enrolled Student Pools

Table 4 shows the demographic profile of the applicant and enrolled student pools for 2008-2009. The majority of applicants to Oregon’s pre-licensure RN programs were white (83 percent)

and female (86 percent). More than half (57 percent) of the applicants were 20-29 years of age and 25 percent were 30-39 years of age. The average age was 28.9. One-third previously earned an associate degree or higher. Seventeen percent of applicants are out-of-state residents. About one-third (34 percent) applied to more than one program.

Unqualified applicants were more likely than qualified applicants to be non-white¹⁴, female, and/or younger. Unqualified applicants were also more likely than qualified applicants to be out-of-state residents but less likely to apply to more than one program. Three program partners did not provide information concerning previous degree earned. As a result, it was not possible to compare the groups with regard to this variable.

Table 4. Applicant and Enrolled Student Pools by Race/Ethnicity, Gender, Age, Previous Degree Earned, Resident Status, and Applications Submitted

	Applicants	Unqualified Applicants	Qualified Applicants	Qualified Applicants Not Accepted	Enrolled Students
Race/Ethnicity					
White/Caucasian	83%	70% ¹	84%	83%	86%
Asian/Pacific Islander	7%	13%	6%	8%	4%
Hispanic	4%	7%	4%	4%	4%
American Indian/Alaska Native	2%	2%	2%	2%	2%
Black/African American	2%	4%	2%	2%	2%
Two or more races	0.03%	0%	0.03%	0%	0.08%
Other	2%	4%	2%	1%	2%
Gender					
Female	86%	89% ²	85%	85%	86%
Male	14%	11%	15%	15%	14%
Age					
<20 years	7%	10%	6%	5%	8%
20-29 years	57%	62%	57%	61%	51%
30-39 years	25%	19%	25%	23%	28%
40+ years	11%	9%	12%	11%	12%
Average age	28.9	27.4 ¹	29.1	28.9	29.5
Youngest, oldest	16,62	18,55	16,62	16,59	18,58
Previous Degree Earned					
Associate degree	10%	Dna	Dna	Dna	Dna
Baccalaureate degree	21%	Dna	Dna	Dna	Dna
Graduate/professional degree	2%	Dna	Dna	Dna	Dna
None	67%	Dna	Dna	Dna	Dna
Resident Status					
Out-of-state applicants	17%	36% ¹	14%	19%	7%
Applications Submitted					
Average number of applications submitted	1.6	1.1	1.7	1.5	1.9
More than one application submitted	34%	9% ¹	37%	31%	43%
<i>Source:</i> Oregon Center for Nursing, Nursing Student Admissions Database Pilot Project (2008-2009). dna: Data not available due to missing values; ¹ p<.001; ² p<.10					

Table 5 compares the demographic profile of students enrolled in Oregon’s pre-licensure RN programs, registered nurses licensed by the Oregon State Board of Nursing, and Oregon residents ages 15 and up.

Table 5. Race/Ethnicity, Gender and Age of Enrolled Students, Oregon Licensed RNs, and Oregon Population			
	Enrolled Students	Oregon Licensed RNs	Oregon Population
Race/Ethnicity			
White/Caucasian	86%	91%	90%
Asian/Pacific Islander	5%	3%	4%
Hispanic	4%	2%	*
Black/African American	2%	1%	2%
American Indian/Alaska Native	1%	1%	1%
Two or more races	0%	1%	3%
Other	2%	1%	0%
Gender			
Male	13%	11%	50%
Female	87%	89%	50%
Age			
<20 years	8%	0%	8%
20-29 years	52%	8%	18%
30-39 years	28%	19%	17%
40+ years	12%	74%	57%
<i>Sources:</i> Oregon Center for Nursing, Nursing Student Admissions Database Pilot Project (2008-2009); Oregon State Board of Nursing Licensure Database (2008); and U.S. Census Bureau Population Projections (Race/Ethnicity and Gender, 2008; Age, 2010). <i>*Note:</i> Comparable data are not available due to methodological differences. The U.S. Census Bureau collects Hispanic origin separately from race, whereas NSAD and OSBN include Hispanic origin as one choice among many race categories. U.S. Census Bureau estimates show that 10.6% of Oregon residents are persons of Hispanic or Latino origin.			

DISCUSSION

The purpose of the NSAD project was to collect baseline demographic data on all nursing school applicants and enrolled students in Oregon. Data was collected at the applicant level instead of the program level. In comparing the program and applicant level data, the program level data overstated the number of nursing school applicants, the number of qualified applicants per seat and the percentage of qualified applicants accepted. The NSAD project provided a more accurate way to determine the demand for nursing school as well as applicant demographics.

While collecting data at the applicant level resulted in more valid data when compared to the program level data, it is important to note two limitations. First, data for the NSAD project was self-reported by institutions as is program level-data. Several steps were taken to increase the validity of the NSAD data. First, an instruction guide was distributed to all sites on what data to include. Second, an instructional webinar was held prior to the first reporting period. During the class, OCN staff reviewed the data to be collected and the format for submitting data. Finally, OCN staff reviewed the data as it arrived and discrepancies were discussed directly with school contact officials.

In addition to the limitation of collecting self-reported data, institutions with multiple programs (e.g., having both a BSN and an accelerated BSN program) differed with regard to the application process for prospective students applying to multiple programs. For example, one baccalaureate program counted applicants applying to both the BSN and accelerated BSN programs as one application. In contrast, another baccalaureate program counted applicants applying to both the BSN and accelerated BSN programs as distinct applications. This resulted in slight variations in the total number of applications received. It may have also led to slight under-reporting of the number of applications submitted by applicants to these institutions. The NSAD project is investigating methods to resolve this concern by discussing it with each affected school.

The NSAD project looked at race, ethnicity and gender of nursing school applicants and enrolled students. There were anecdotal reports that students from underrepresented backgrounds who were qualified for nursing school were being turned away at higher rates. NSAD data did not support these anecdotal reports. Applicants from under-represented groups were admitted at similar rates but students from under-represented groups who did not meet the minimum qualifications for nursing school were over-represented.

The NSAD project also allowed the comparison of the race and ethnicity of applicants who enrolled in nursing school to the population of Oregon. Applicants from Asian, African-American, and Native American groups enrolled at similar rates as the Oregon population. The percentage of applicants who enrolled in nursing school was not representative of the Oregon population. While several of the under-represented groups were representative of the Oregon population in regards to applicants who were enrolled in nursing school, students from under-represented groups were over-represented as unqualified applicants. This indicates they did not meet the minimum requirements for nursing school.

While data from the NSAD project provided a wealth of valuable information on the race and ethnicity of applicants, there are some limitations. First, nursing schools do not uniformly collect race/ethnicity information from applicants. Some institutions do not collect the information at all and those that do collect the information in a variety of ways, making it a challenge to categorize individuals. In some cases, applicants are asked to choose between ethnicity and race, often resulting in under-reporting applicants from Hispanic backgrounds. It also makes it impossible to compare the number of Hispanic nursing students to the Oregon population due to the differences in data collection. The Federal Office of Management and Budget, as well as the US Department of Education, recognized this problem and issued guidelines for the collection of race and ethnicity from applicants. These new guidelines will be in effect in 2010 but schools were encouraged to implement them in the 2009-2010 academic year. These federal changes should improve the validity of the ethnicity and race data. Additionally, slight changes to the NSAD reporting template are being considered to increase the validity of the collected data.

The final limitation of this data is that there is missing data. Two institutions did not collect applicant race or ethnicity. Many institutions did not collect previous degrees or educational information. With the new federal regulations, it is anticipated that race and ethnicity will be collected by all institutions by the 2010-2011 academic year. Prior to the collection of 2009-2010 data, another educational class will be held for NSAD project participants. During the meeting,

the importance of submitting thorough data will be emphasized with particular regard to previous degrees and educational experiences.

CONCLUSION

The Oregon nursing workforce must become more diverse to meet the needs of our increasingly diverse state. One area for intervention is attracting, admitting and retaining diverse students into Oregon's nursing schools. The creation of the NSAD made several contributions to that goal.

The NSAD compared collecting data at applicant level versus program-level. As many applicants apply to multiple schools, program-level data overstated the demand and demographics of applicants. NSAD data collected at an applicant level serves as a baseline to monitor future retention data and trends in demand and demographics.

Another major contribution of the NSAD was the analysis of the racial and ethnic backgrounds of nursing school applicants. Many speculated that qualified students from under-represented groups were being turned away from nursing schools at higher rates. The NSAD data revealed that this assumption was not true. The percentage of qualified nursing school applicants from under-represented groups was not significantly different from the percentage of nursing students who applied to nursing school. However, applicants from under-represented groups were over-represented as non-qualified applicants, meaning they did not meet the basic requirements of institutions such as minimum grades or application deadlines.

During year two of the NSAD project, applicant demographic data will continue to be collected. Several modifications will be made to the race and ethnicity section to ensure more valid reporting of this important data. Additionally the NSAD project will investigate ways to standardize the reporting of applicants who apply to programs at multiple institutions. Both of these changes will increase the validity of the NSAD data.

NSAD will also begin to explore some of the reasons that applicants do not meet the basic qualifications for nursing school. This is especially important as some under-represented groups are over-represented in the unqualified applicant category. This data may be helpful in planning as specific recruitment strategies are created.

During year two, NSAD will also begin to collect student retention data. While pilot year data indicated that under-represented groups were admitted at similar rates as Caucasian students, the retention rates of these students are unclear. This data may also be useful in creating solutions to retain admitted students.

Increasing the diversity of the nursing workforce will require multiple initiatives that target recruitment of nursing school applicants, retention of enrolled nursing students and licensed professionals, workplace policies and practices and increasing cultural competence among all nurses. The Nursing Student Admissions Database's baseline data begins to lay a foundation for future work in increasing the diversity of the Oregon nursing workforce.

NOTES

1. Institute of Medicine. (1999) *Unequal treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington DC: The National Academies Press.
2. Oregon Center for Nursing. (2005). *When not if: A report on Oregon's Registered Nurse Workforce*. Portland, OR: Oregon Center for Nursing.
3. National Quality Forum. (2009). National voluntary consensus standards for a comprehensive framework and preferred practices for measuring and reporting cultural competence.
http://www.qualityforum.org/Publications/2009/04/A_Comprehensive_Framework_and_PREFERRED_Practices_for_Measuring_and_Reporting_Cultural_Competency.aspx
4. The Oregon State Board of Nursing estimated that for each available pre-licensure RN program seat in 2006, as many as five qualified applicants were turned away.
5. Association of Academic Health Centers. (2008) *Out of Order, Out of Time: The State of the Nation's Health Workforce*. Washington DC: Association of Academic Health Centers.
6. The New York Center for Health Workforce Studies. (2006). *The United States health workforce profile*. Retrieved from <http://chws.albany.edu/index.php?id=11,0,0,1,0,0>
7. The Sullivan Commission. (2008). *Missing persons: Minorities in the health professions*. Retrieved from http://www.amsa.org/div/Sullivan_Commission.pdf
8. Oregon Workforce Investment Board (OWIB) Strategic Plan. (2006) *Winning in the global market: A plan to transform Oregon's workforce education and training system*. OWIB: Salem, OR. Retrieved from <http://www.worksourceoregon.org/index.php/component/content/109?task=view>

The NSAD Pilot Project's primary purpose was to concentrate efforts in a way that would meet the OWIB's Strategic Plan directly linked to Goal 2, Object 2C and Action Steps 1 and 2. Goal 2: "Prepare an agile, innovative workforce with the skills to succeed in the knowledge-based economy." Objective 2C: "Close the skills gap by linking occupational skills training to demand in the global market," Action Step 1: "Link occupational skills training to demand in the global market. Advocate to increase career pathways and other educational initiatives in high demand occupations," and Action Step 2: "Lead effort and advance state policy to target workforce training to demand occupations."

The secondary purpose was to increase diversity in nursing by addressing Objective 2A and Action Step 5. Objective 2A: "Every Oregonian has the core academic and workplace skills employers need and value," and Action Step 5: "Lead efforts to maximize the potential for employment of people who are unemployed or underemployed for reasons related to their demographic status, including people with disabilities, English language learners and rural residents."

9. FERPA is a federal regulation that protects the privacy of students (and their parents) attending educational or instructional institutions that have funds available to them under any program administered by the Office of the Secretary of the United States Department of Education. FERPA can be found in the Code of Federal Regulations under 34 CFR Part 99. An electronic version of FERPA is available for download at <http://www.ed.gov/policy/gen/reg/ferpa/index.html>
10. Federal regulations governing the protection of human subjects research can be found in the Code of Federal Regulations under 45 CFR Part 46. The document contains the United States Department of Health and Human Services rules and regulations regarding the protection of human subjects in research. An electronic version of 45 CFR Part 46 is available for download at <http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm>
11. The project defined “offer” as any applicant receiving an offer for full admission or placed on an alternate or wait list.
12. If a nursing program seat was available for every qualified applicant, applicants in the qualified not accepted (QANA) pool would have received offer for full admission.
13. Many states, including Oregon, as well as the National League for Nursing and the American Association of Colleges have acknowledged that the numbers they report on the nursing applicant pipeline have been overestimated due to multiple program applicants that their data collection methods could not account for.
14. National League for Nursing. (2008). *Nursing data review: Academic year 2005-2006*. New York: National League for Nursing, 2008.
15. Applicants were assigned to one of two groups—white or non-white—based on race/ethnicity data. White includes applicants identified as White/Caucasian. Non-white includes applicants identified as American Indian/Alaska Native, Asian/Pacific Islander, Black/African American, Hispanic, Other, or Two or more races.

APPENDICES

Appendix A: ADN and BSN Program Partners and Project Contacts

PROGRAM	LOCATION	PROGRAM TYPE	DEAN/DIRECTOR	PROJECT CONTACT
Blue Mountain Community College	Pendleton	ADN	Terry Vogel	Jan Hood, Institutional Reporter/AIS Programmer
Central Oregon Community College	Bend	ADN	Michele Decker	Seana Barry, Admissions/Records
Chemeketa Community College	Salem	ADN	Kay Carnegie	Melissa Frey, Enrollment Services
Clackamas Community College	Oregon City	ADN	Carol Thorn	Carol Thorn, Nursing Program Chair
Clatsop Community College	Astoria	ADN	Laurie Choate	Joanne Swenson, Admissions
Columbia Gorge Community College	The Dalles	ADN	Lorie Saito	Karen Carter, Dean of Student Services
Lane Community College	Eugene	ADN	Tricia Tully	Sylvia Sandoz, Institutional Research, Assessment and Planning
Linn-Benton Community College	Albany	ADN	Faye Melius	Roxie Putman, Admissions
Mt. Hood Community College	Gresham	ADN	Janie Griffin	Judy Froehlich, Admissions and Transcript Evaluator
Oregon Coast Community College	Newport	ADN	Joyce Godels	Marjorie Blake, Nursing Program Assistant
Portland Community College	Portland	ADN	Marilyn McGuire-Sessions	Melissa Stark, Health Admissions Specialist
Rogue Community College	Grants Pass	ADN	Linda Wagner	Melissa Weast, Nursing Department Secretary
Southwestern Oregon Community College	Coos Bay	ADN	Susan Walker	Aimee Higgins, Assistant to Nursing Coordinator
Treasure Valley Community College	Ontario	ADN	Maureen McDonough	Rocky Ingalls, Database Support Administrator
Umpqua Community College	Roseburg	ADN	Sandy Hendy	LaVera Nordling, Admissions
Concordia University-Portland	Portland	BSN	Joyce Zerwekh	Jennifer Pearce, Program Coordinator, College of Health and Human Services
George Fox University	Newberg	BSN	Ron Mitchell	Elaine Smith, Admissions Assistant, Department of Nursing
Linfield-Good Samaritan School of Nursing	Portland	BSN, Accelerated BSN	Bonnie Saucier	Shirley Buffa, Nursing Admissions Assistant
Oregon Health & Science University (OHSU)	Portland	BSN, Accelerated BSN	Michael Bleich	Jennifer Anderson, Director of Admissions, Retention and Progression
University of Portland	*Portland	BSN	Joanne Warner	Stacey Boatright, Nursing Program Counselor
Walla Walla University School of Nursing	Portland	BSN	Lucille Krull	Jan Thurnhofer, Nursing Department Student Program Advisor
<p>*Note: OHSU offers the BSN degree at four branch campuses: Southern Oregon University in Ashland, Oregon Institute of Technology in Klamath Falls, Eastern Oregon University in La Grande, and Western Oregon University in Monmouth.</p>				

Appendix B: 2008 Pilot Project Team

The 2008 Nursing Student Admissions Database Pilot Project Team was comprised of the following members:

Tamara Bertell, Project Manager, 2008-2009

Oregon Center for Nursing

Beth Morris, Research Analyst

Kristine K. Campbell, Executive Director

Oregon Center for Nursing

Lyzzy Caley Stewart, Program Manager, 2009-2010

Oregon Center for Nursing

Beth Woodward, Workgroup Chair

Linfield-Good Samaritan School of Nursing

Director of Enrollment Services and Health Sciences Programs

Jennifer Anderson, Workgroup Member

Oregon Health & Science University, School of Nursing

Director of Recruitment, Admissions and Progression

Flora Acosta, Workgroup Member

Portland Community College, Nursing Program

Health Admissions Specialist

Paul Navarre, Database Developer/Manager

Net Interaction

Appendix C: Description of Oregon’s Pre-licensure RN Programs

Oregon has 21 pre-licensure RN programs that offer three types of programs leading to two types of nursing degrees allowing graduates to take the RN-NCLEX exam and, upon successfully passing the exam, begin working as an RN in a variety of settings.

The three types of programs leading to the two types of nursing degrees are: Associate Degree in Nursing (ADN) programs available at 15 community colleges, Bachelor of Science in Nursing (BSN) programs available at one public university and five private colleges, and two Accelerated Bachelor of Science in Nursing (BSN) programs available at the public university and one private college for individuals who have previously earned a baccalaureate degree in any discipline.

Eighteen of Oregon’s 36 counties offer an ADN or BSN nursing program. The majority of the nursing programs are located in the heavily populated western third of the state with just over half located along the I-5 corridor. The eastern rural portion of the state is home to just two ADN programs and one BSN satellite program. All six BSN programs and three of the ADN programs are located in or just outside the Portland metro area. The public university also offers its BSN program at four branch campuses around the state.

While either type of degree, the ADN or BSN, leads to becoming an RN, there are some differences between program content, length of program time and opportunities for career advancement. Earning either type of degree requires prerequisite health sciences coursework and at least some liberal arts courses including English, math and humanities, prior to applying for admission to a nursing program.

Associate Degree in Nursing (ADN) programs focus on the technical skills needed for direct patient care in a variety of settings. An ADN program typically takes two years to complete, excluding the one to one-and-half years it typically takes to complete the pre-requisite courses required prior to applying to the program.

Earning an ADN often allows graduates to begin working sooner, though career advancement options in management, administration, and research are limited. RNs with an ADN can complete a BSN at a later time.

Bachelor of Science in Nursing (BSN) programs provide graduates with a four-year university or college degree with a major in nursing where the junior and senior years focus almost exclusively on nursing coursework. In addition to teaching students direct patient care skills, BSN programs provide coursework in family and community nursing, leadership, management and research. Having a BSN allows RNs greater opportunity to advance to positions in management, administration, and research, and also to enter advanced nursing degree programs.

Most Oregon BSN programs allow students the option of completing pre-requisite courses at community or other colleges and universities before applying as a transfer student to complete the junior and senior years of nursing coursework.

Accelerated Bachelor of Science in Nursing (BSN) programs take 15 to 18 months to complete and are fast-paced. Students in these programs have already earned a previous baccalaureate degree in another field, so focus solely on nursing coursework.

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